

**Brains On (APM) | Brains On! Brains On! + The Story Pirates: What makes fun things fun?
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INTERVIEWER 1: You are listening to *BrainsOn*, we're serious about being curious.

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2:

MOLLY BLOOM: Great job, Isa. Taping that episode about gross things was a little ew.

ISA CAMARGO: Yeah, but good ew. If that's possible. Learning about grossness was surprisingly fun.

MOLLY BLOOM: Hey, while you're still here at Brains On headquarters, do you want to grab a snack in the lab or kitchen?

ISA CAMARGO: Sure.

MOLLY BLOOM: All right, let's go. Ah! Ow.

[GROANS]

ISA CAMARGO: Molly, are you OK?

MOLLY BLOOM: Ooh. Yeah. I just tripped over-- Bob?

ISA CAMARGO: Bob, why are you lying face down on the floor?

BOB: Because I don't know how to--

MOLLY BLOOM: Bob, can you sit up, please? It's hard to understand when your face is smushed on the floor.

BOB: I said I'm on the floor because I don't know how to have fun anymore. All the things that used to be fun are boring. I'm just bored. And it stinks.

ISA CAMARGO: I know you love filing papers into folders. Did you try that?

BOB: Yeah.

MOLLY BLOOM: Counting clouds?

BOB: Yes.

ISA CAMARGO: Looking at your popsicle stick collection?

BOB: Yes. All my favorite things, all boring.

MOLLY BLOOM: Wait. I have an idea. Come with me, Isa. You, too, Bob. Elevator, take us to the Question Vault, please.

ELEVATOR: Going to the Question Vault.

ISA CAMARGO: The Question Vault?

MOLLY BLOOM: You're going to love this.

ELEVATOR: Here we are, the Question Vault. Please browse responsibly.

MOLLY BLOOM: Thanks, elevator. Just have to put in the code. Then check fingerprints. The retinal scan.

ISA CAMARGO: This is a lot of security.

MOLLY BLOOM: The breath test. And finally, voice recognition. I'm Molly Bloom.

[ELECTRONIC SOUNDS]

ISA CAMARGO: Whoa. The Brains On Question Vault.

MOLLY BLOOM: Pretty cool, huh? Come on in. This is where we store the thousands and thousands of questions that listeners have sent to us. See? Each one is stored in one of these capsules.

ISA CAMARGO: There's hundreds of shelves. Looks like it goes on forever.

MOLLY BLOOM: All right, let's see here. I think the one I'm looking for is-- oh yes, here it is. Now I just twist it like this.

QUINN: My name is Quinn from Leroy, Illinois. My question is, what makes fun, fun?

BOB: Wish I knew.

MOLLY BLOOM: We're going to find out. We're going to answer this question today for you and Quinn, and we're going to help you have fun again.

BOB: If you say so.

ISA CAMARGO: We say so.

MOLLY BLOOM: To the studio.

[MUSIC PLAYING]

You're listening to *Brains On* from American Public Media. I'm Molly Bloom, and my co-host today is Isa Camargo from Orlando, Florida. Hi again, Isa.

ISA CAMARGO: Hi again, Molly.

MOLLY BLOOM: And Bob. We cannot forget Bob.

BOB: Hi. I'm still Bob.

MOLLY BLOOM: All right, Bob. We're going to help you have fun again.

ISA CAMARGO: And we're going to figure out what fun is in the process. We asked our listeners for some help describing fun. And here's what they said.

[MUSIC PLAYING]

JAHAN ZEB: My name is Jahan Zeb, and I'm from Pakistan. And I think fun is building Lego.

SUBJECT 1: Fun is something that makes you feel happy.

SUBJECT 2: Fun is something that you enjoy and is satisfying, like jumping through a water sprinkler on a hot day.

SUBJECT 3: I think that fun things are fun because they are things that amuse your mind.

SUBJECT 4: I think that people would describe fun as in something that's exciting, or they like to do it.

SUBJECT 5: Your heart is lifting up and you feel like you're flying in the air. Wee!

MOLLY BLOOM: Thanks to those fun loving listeners. Reese from Minneapolis, Charlotte from Los Angeles, Lucy from Fairfax, Virginia, Leo from Portland, Oregon, Jahan Zeb from Pakistan, and Rayna from Kenosha, Wisconsin.

ISA CAMARGO: Well that was fun. Feeling inspired yet, Bob?

BOB: They make it sound so simple.

MOLLY BLOOM: Don't worry, Bob. We're not done yet. We've got someone who really knows fun from the inside out. Her name is Sarina Saturn. She's a neuroscientist from the University of Portland, and here she is now.

ISA CAMARGO: Hi, Sarina.

SARINA Hi, Isa. Hi, Molly and Bob.

SATURN:

BOB: Hi.

MOLLY BLOOM: Hi. So thank you so much for coming here today. We're hoping you can help us solve our friend Bob's problem. We're going to start with some questions.

ISA CAMARGO: What happens in your brain when you're having fun?

SARINA So there are different neurochemicals and brain structures devoted to different flavors of fun. So one key area
SATURN: recruited is, especially for activities that are really thrilling, is the reward system, which is generally considered to be made up of dopamine pathways in the brain. And one thing about dopamine, because we're an ultra social species, we've evolved to get a big dopamine rush when we're helping other people. So we can actually get a lot of fun from being altruistic as well.

And a lot of fun can come from social bonding as well, especially when we're doing these activities. Such as playing a game or sharing fun experiences. And that involves oxytocin, which is released in the hypothalamus. And that goes to other parts of the brain and also to our body to give us those warm fuzzies when we're connecting with other people. And also with animals as well.

Sometimes we get that rush of adrenaline when we are having fun activities that makes our heart rate accelerate. And serotonin is also a really interesting neurochemical involved with overall attunement and mood throughout our brain. And also our guts. And it keeps warding off the blues and social withdrawal, and also aggression. So serotonin's really key when we're cooperating and also just navigating life.

ISA CAMARGO: I didn't know there were chemicals involved.

SARINA Yeah, there's so many interesting chemicals in our brain and also our body that play a role in how we respond to
SATURN: all of these emotional experiences in our life.

MOLLY BLOOM: Can you describe what's happening with these chemicals? Are they released in the brain? Or how or do they make us feel the things that you're talking about?

SARINA Yeah, absolutely. So oxytocin as an example is released by the hypothalamus, and it goes to other parts of the
SATURN: brain that are involved with emotions and bonding. But it's also released into the bloodstream. And so there are targets. These neurochemicals have what we call receptors. It's a lock and key mechanism.

And so some of these receptors are on our heart to either help our heart slow down and calm down or to put on the acceleration pad. There are also areas in our spinal cord. And also our guts as well. Sometimes we can go with our gut instinct, because a lot of these neurochemicals have receptors and are actually synthesized in our bellies, allowing us to have this really great mind-body connection as well.

MOLLY BLOOM: So these chemicals, basically when we have fun, they're released by our brain and make us feel good for having fun.

SARINA Yeah, we have evolved to make these things intrinsically rewarding and so that we'll remember them and want
SATURN: to do them again in the future. Our brains are pretty awesome.

MOLLY BLOOM: Well thanks so much, Sarina. This is really helpful.

SARINA Oh, it's my pleasure. Thank you so much for having me. Farewell.
SATURN:

BOB: Bye.

ISA CAMARGO: Goodbye.

[MUSIC PLAYING]

MOLLY BLOOM: OK, Bob, are you feeling like you're ready to try having some fun?

BOB: I feel like maybe I'm hungry.

MOLLY BLOOM: OK. Well here's something I think is fun. It's time for the mystery sound.

[MYSTERY SOUND CUE]

AUDIO TRACK: Mystery sound.

MOLLY BLOOM: Here it is.

[ROUGH PANTING]

Any guesses?

BOB: Molly, did you sneak into my room and get me snoring?

MOLLY BLOOM: No. That's a really good thought.

BOB: That wasn't me snoring?

MOLLY BLOOM: No, it was not you snoring. I can say that, for sure. It was not you snoring.

BOB: Oh.

ISA CAMARGO: It sounded like somebody breathing very heavily. But it also sounded like it sounded like a gorilla or a monkey.

MOLLY BLOOM: Very good thoughts. Bob, do you have any other guesses besides yourself snoring?

BOB: Maybe myself eating?

[LAUGHS]

MOLLY BLOOM: Well, that's an excellent thought, too. And we're going to be back with the answer a little later in the show.

BOB: Oh.

ISA CAMARGO: Gungador!

GUNGADOR: It me! Funnest in land.

MOLLY BLOOM: Gungador, hi. What's up?

GUNGADOR: Gungador heard Bob not have fun anymore. So Gungador wants to share mega good super awesome fun thing to do.

BOB: Well, that's awfully nice of you, Gungador.

GUNGADOR: Gungador is sweetheart.

ISA CAMARGO: So what's fun, Gungador?

GUNGADOR: Dancing, of course.

[MUSIC PLAYING]

Let it sway. Let shoulders bounce. Let arms wave. Let body be free.

BOB: I'll give it a try. Huh, this isn't so bad.

MOLLY BLOOM: Not bad, Bob.

GUNGADOR: Kick.

BOB: Kick?

GUNGADOR: Spin twirl.

BOB: I'll try.

GUNGADOR: Worm.

BOB: I can't do that.

GUNGADOR: Spin on head.

BOB: Ow!

GUNGADOR: Double high kick backflip.

BOB: Double-- ow. Oh, stop the music. Stop the music. That's enough. I'm sorry, Gungador. You have the athletic grace reminiscent of a young Gene Kelly. But me? No way. I definitely pulled a muscle, I think. Mark that in the not fun column.

GUNGADOR: Oh well, Gungador tried. Let Gungador know if you want to try line dancing sometime. Lower risk.

ISA CAMARGO: Bye, Gungador.

MOLLY BLOOM: It looked like you were having fun there for a while, Bob.

BOB: I guess. But I'm no monster trained to fight in an epic video game who renounces his violent past and then discovers a natural ability to dance and a passion for the arts. I'm just Bob.

MOLLY BLOOM: Well, I appreciate you trying. And Isa and I aren't done trying, either. But first, we want to tell our listeners about a fun job for their imaginations. We're working on a new show.

ISA CAMARGO: And we need your help dreaming up the skateboard of the future.

MOLLY BLOOM: What would it look like? And what would it be able to do?

ISA CAMARGO: Send your ideas to us at brainson.org/contact. Molly, what would your skateboard of the future be able to do?

MOLLY BLOOM: My skateboard of the future would be able to both go on water, which I guess might be a surfboard, and then also go into outer space.

ISA CAMARGO: Ooh.

MOLLY BLOOM: Yeah.

ISA CAMARGO: I'd want that skateboard.

MOLLY BLOOM: Yeah, it'd be pretty awesome. Send us your ideas, listeners, at brainson.org/contact. And while you're there, you can send us your questions, mystery sounds, and drawings, too. That's what Colby did.

COLBY: How do pirates communicate on different ships?

ISA CAMARGO: We'll answer that question during our Moment of Um at the end of the show.

MOLLY BLOOM: And we'll have the latest group to be added to the Brains Honor Roll.

ISA CAMARGO: Keep listening.

OK, Bob. Are you having fun yet?

BOB: No. Not yet.

MOLLY BLOOM: Well, let me try calling up my pal Liz Bonowitz. She's a psychologist who studies how children learn.

LIZ BONOWITZ: Hello, this is Liz.

MOLLY BLOOM: Hi, Liz. I'm here with my friends, Isa and Bob.

BOB: Hi.

ISA CAMARGO: Hi.

LIZ BONOWITZ: So how can I help you guys today?

MOLLY BLOOM: Well, Bob is really having trouble having fun.

LIZ BONOWITZ: Oh, Bob. I'm so sorry to hear that you're feeling that way. It's totally normal to feel bored sometimes, so it's OK to sometimes feel bored. So Bob, maybe you're feeling bored because whatever you're doing, it doesn't feel like it's challenging.

BOB: What do you mean?

LIZ BONOWITZ: So things can be fun for a lot of reasons. They could be fun because they're new or surprising. Things can also be fun because they make us feel closer to other people. And things can also be fun when they help us imagine or pretend. So it feels good to let our mind explore new or surprising ideas and to practice skills that we might not be sure about doing in the real world.

Scientists like myself actually are finding that having fun is really important for learning.

MOLLY BLOOM: OK, just to recap. Fun things are often something new or have something about them that changes.

LIZ BONOWITZ: Yeah.

ISA CAMARGO: When we do them with other people.

LIZ BONOWITZ: Uh-huh.

MOLLY BLOOM: And when we use our imaginations. And this is all because they give us opportunities to learn something new?

LIZ BONOWITZ: Yeah.

BOB: So does that mean I'll never find filing fun again? I do it alone. And it's not a new thing.

LIZ BONOWITZ: Of course you can find filing fun again, Bob. I think you need to think a little bit about what made it so fun in the first place and maybe try to think about new ways that you can file maybe that'll make it more interesting for you in the future. So things can be fun also because they're familiar, and that can be comfortable. It can be fun for us to feel like we know how to do something and to try to do something again and again.

It can also be fun when things are a little bit different each time, but close enough that we can predict what's going to be happening. So it feels really good when we think we know what's going to happen.

MOLLY BLOOM: Well, thanks for the advice, Liz.

LIZ BONOWITZ: OK, thanks. Bye.

MOLLY BLOOM: Bob, there's some really good advice there. Have you tried tapping into your imagination? Maybe give you some new ideas about how to make filing fun again?

BOB: My imagination feels all dried up.

ISA CAMARGO: Maybe our friends the Story Pirates can help. They're full of imagination.

MOLLY BLOOM: Let's call them up.

[DIAL TONE]

LEE: Hello, you've reached the Story Pirates. Lee speaking.

MOLLY BLOOM: Hi, Lee. This is Molly from *Brains On*.

LEE: Molly, so good to hear from you! Honestly, it's good to hear from anyone these days. But especially you. Ever since we crashed our pirate ship on this deserted island in the middle of the ocean, things have just been a little slow. But enough about us. What's going on with *Brains On*?

MOLLY BLOOM: Well, Lee, we're hoping you can help us out. Our friend Bob has forgotten how to have fun.

LEE: How can we help?

MOLLY BLOOM: Well, you know how you take stories written by kids and then turn them into songs and sketches?

LEE: I do know.

MOLLY BLOOM: Well, I thought you could do that.

LEE: Molly, that's a great idea. In fact, we already recorded a story and sent it to you via seagull.

MOLLY BLOOM: Via seagull?

LEE: Yep. He should be arriving right about now.

MOLLY BLOOM: Whoa. Wow, here's the tape.

LEE: Yep. Seagulls are awesome. Hey, why don't you give it a listen? It's a song, and it's based on an original story by a fifth grader from Arkansas named Lily. And Lily's story is called Pizza Revenge.

[MUSIC PLAYING]

Pizzas, we have a problem. People are eating hotdogs instead of pizza. And those lousy hotdogs are rubbing our noses in it. We need to get our revenge. With our best agents on the case. Pep?

PEP: Yes?

STORY PIRATE: Meg?

MEG: Yeah.

STORY PIRATE: What are you waiting for? Go!

(SINGING) I am a slice of pepperoni pizza. Pep is a slice of pepperoni pizza. I am a slice of cheesy, cheesy pizza. Meg is a slice of cheesy, cheesy pizza. And we've got a big old problem spreading through the land. Hotdogs are too popular, which we can't stand. The pizza market's plummeting from low demand. Luckily, we've got something planned. 'Coz people ought to eat pizza. And say we're eat ya. 'Coz if they do, they'd say, yum, yum, yummmity, yum, yum, yum, yummy, yummy, yum, yum, yummmity, yum.

'Coz nobody should eat hot dogs. They're yucky mystery meat bogs. So now it's time to have our pizza revenge.

PEP: OK, I'm going to get the computer ready. Our boss is counting on us to do this right.

(SINGING) See you in an hour. Meg, I'll be done in just a couple minutes. 20 minutes later.

PEP: Oh, it's not working. It must be a wire.

(SINGING) 30 minutes later. Yes, I got it fixed. I bet it's gonna end up great.

MEG: Terrific! Now we can do the final and hardest part of this plan.

(SINGING) Now it's time to make a little video. Yes, we're going to make a little video. Tell the world the things that you and I know. Pizza wonders and hot dog horrors, yo.

LEE: All right, let's take a look at this video of yours. Let's pop it in here and press play.

(SINGING) Hotdogs are yummy and pizza is yummy. Eating a hotdog will upset your tummy. Hotdogs are raw and pizza is rocking. The things in a hotdog are really quite shocking. Did you know hotdogs are filled with rocks? Did you know hotdogs are filled with socks? Did you know hotdogs are filled with teeth? Did you know hotdogs are filled with Keith?

KEITH: Hey, that's funny. My name is Keith. Wait, but that means-- oh no!

LEE: And you say this thing is already gone viral?

MEG: That's right, boss. Listen to this crowd outside.

(SINGING) Oh, we'll never eat hotdogs again. Our video has started spreading far and wide. We share the truth of hotdogs and the stuff inside. So fellow pizzas, humans are now horrified. And now only want pizza to eat. Hotdogs have been defeated! So now we're going to eat pizza. And say we're happy to eat ya. And when they do, they'll say, yum, yum, yummmity, yum, yum, yummy, yummy, yum, yum, yummmity, yum.

Because everybody loves pizza. We love pizza. And we're so happy to eat ya. And that's the way the pizzas got their revenge. And that's the way the pizzas got their-- in our point of view-- revenge!

MOLLY BLOOM: What did you guys think of that story?

ISA CAMARGO: That was funny.

BOB: I think I didn't get some of the jokes.

MOLLY BLOOM: Well, you can hear more from Story Pirates in their podcast feed. And in fact, we are on their latest episode talking about what makes jokes funny. And since we're talking about jokes, I feel like telling one right now. What do you call a fish with no eyes? To hear the punchline, you'll have to listen to Story Pirates.

If you've already listened to Story Pirates, then you've heard the setup for a totally different joke and you're here now to hear that punch line. So the punch line for that joke is--

Sleeves. Isn't that punch line making you curious about the joke that led to it? Well, if you want to hear the setup, go to Story Pirates right now wherever you get your podcasts.

AUDIO TRACK: Brains On!

MOLLY BLOOM: You know what's even more fun than hearing a mystery sound? Hearing it again. Let's hear it one more time.

[ROUGH PANTING]

OK, guys. Any new thoughts about what that might be?

ISA CAMARGO: I still think that it's a gorilla or a type of monkey.

MOLLY BLOOM: Excellent thought.

BOB: I thought it might have been two popsicle sticks being rubbed together.

MOLLY BLOOM: Like maybe you're trying to start a fire with them or something?

BOB: Yeah.

MOLLY BLOOM: Yeah. Very good guess. Well, here is the answer.

JENNIFER SMITH: I am Jennifer Smith, and I am a professor at Mills College in Oakland, California. I study animal behavior and the social lives of non-human mammals. And you just heard the sound of two immature chimpanzees laughing and playing with each other. And their names are Flint and Sherry, and they started playing. They were chasing each other. And if you listen very carefully, you'll hear Sherry panting, which is the louder sound. And also Flint was laughing there, suggesting that play might be fun for these chimpanzees just in the same way that humans engage in play out on a playground, for example.

As a biologist, when I'm out with my binoculars and I'm watching squirrels or other animals play with each other, it just looks like fun. They have these interactions. One will hop on the other and the other will come back in the other direction. And the early play that young animals are doing, that prepares them for life later on.

ISA CAMARGO: Yes!

MOLLY BLOOM: You got it right, Isa. Two chimpanzees.

BOB: Those chimps, they sound so happy. That makes me feel worse somehow.

ISA AND BOB: Aw.

ISA CAMARGO: Let's go for a walk. That will help. Let's get out of the studio for a little bit.

MOLLY BLOOM: Yeah, it's a little less claustrophobic out here in the hallway.

ISA CAMARGO: A chance for your imagination to start percolating.

BOB: Well, you guys do get some great natural light out here at this time of day. But hey. You're trying to distract me. And it isn't working. I still haven't forgotten that animals can have fun and I can't.

ISA CAMARGO: Well, that might be projecting some feelings on to the chimps.

MOLLY BLOOM: Yeah. We can't say whether they experience fun in the exact same way humans do. But they're definitely playing and laughing, so yeah, it sounds like fun to me.

BOB: Well, if everyone is having fun, even animals, maybe I don't need to. What's the point anyway?

EMILIE SNELL- Hey, guys. How's it going?

ROOD:

MOLLY BLOOM: Emilie Snell-Rood.

ISA CAMARGO: Evolutionary biologist from the University of Minnesota.

MOLLY BLOOM: I forgot you were going to be here today for your weekly dance lesson with Gungador. You're the perfect person to help us. Can we ask you a couple questions?

EMILIE SNELL- Sure can.

ROOD:

ISA CAMARGO: What's the purpose of fun?

EMILIE SNELL- So a lot of it has to do with exploring things and trying things out in an environment where a lot of those things, like getting shelter and getting food, are taken care of by other individuals for the time being. So that individual can relax and have fun and explore and figure things out. And that is an important part of their development.

ROOD:

MOLLY BLOOM: Right. I have heard playing helps form connections between lots of different cells in the brain. Those are called neural connections. And having lots of connections is good. It helps us learn new things more easily.

ISA CAMARGO: Since play is so important for development, that might explain why kids get recess.

MOLLY BLOOM: Huh. Why don't grownups get recess? Are adults less interested in fun?

EMILIE SNELL- Later on, as you get older, you start to become more attentive and focused on specific things, like building shelter or finding food. Things that have more of a purpose that you need to do in order to survive. Because playing and exploring and trying out lots of different things could be costly. It might waste time and energy. So that tends to decrease over time as we become adults and we become more boring and focused. But we're getting stuff done. We're being more efficient. We're getting our jobs done.

BOB: So I can't have fun because I'm not a kid anymore?

MOLLY BLOOM: No way. Adults have fun all the time. Even if we do have to spend a bit more time on the not so fun stuff, too.

EMILIE SNELL- One could argue that play should be really important. Adults are not making as many neural connections as kids
ROOD: are, but we're still making some and we're certainly maintaining them. So play and exploration is going to be really important there as well.

ISA CAMARGO: So when you're playing, you're actually doing work. You are helping your brain, but you just don't realize it.

EMILIE SNELL- You are doing work. But it's fun. And because it serves this really important developmental function. That's
ROOD: probably why it feels fun, because it's important.

GUNGADOR: Emily, there you are. Gungador waiting in dance studio.

MOLLY BLOOM: Oh, sorry. We don't want to keep you. Thanks so much for talking to us, and sorry for delaying your lesson, Gungador.

EMILIE SNELL- Well, I hope that helped you out some. Goodbye.
ROOD:

MOLLY BLOOM: OK, Bob. You heard Emily. Having fun is important for our brains for kids and grownups.

ISA CAMARGO: We need to get you to have fun.

BOB: Well, I'm open to your ideas.

MOLLY BLOOM: Isa, what is one of your favorite ways to have fun?

ISA CAMARGO: Ooh, I love karaoke.

MOLLY BLOOM: Bob, have you tried karaoke before?

BOB: No. I never have.

MOLLY BLOOM: Perfect. It's new to you. You're bonding with us. We're learning something. Let's pick a song. HARVEY?

[DINGS]

HARVEY: Yes, Molly?

MOLLY BLOOM: We're looking for a karaoke song for Bob.

HARVEY: Scanning karaoke database.

ISA CAMARGO: What's HARVEY?

MOLLY BLOOM: Oh, that's our new artificially intelligent voice assistant.

SANDEN It stands for Hearing And Reading Virtually Everything, Yo.
TOTTEN:

MOLLY BLOOM: Hey, Sanden. What's up?

SANDEN HARVEY sent an alert that it's time for karaoke.
TOTTEN:

HARVEY: A popular karaoke song choice is *Let It Be* by The Beatles.
BOB: Beatles? I don't like bugs.
HARVEY: How about *I Will Survive* by Gloria Gaynor?
BOB: I'm barely surviving as it is.
MARC Hey, guys. Has karaoke started yet?
SANCHEZ:

SANDEN HARVEY's trying to find a song for Bob.
TOTTEN:

HARVEY: Katy Perry's *Firework*.
BOB: Sounds dangerous.
HARVEY: *Uptown Funk*?
BOB: Oh, but I live downtown.
MOLLY BLOOM: Bob, just think of one song you like.
BOB: Oh.
ISA CAMARGO: Think, Bob, think!

SANDEN You can do it, Bob.
TOTTEN:

MARC We'll even be your backup dancers.
SANCHEZ:

GUNGADOR: Did someone say dancers?
BOB: Oh, I have one.
MOLLY BLOOM: Great. What is it? It goes like this.

(SINGING) This is a song I like. Hey, guys, come sing along.

ISA CAMARGO: Wait, I know that song.
HARVEY: Identifying song. Found it.

[MUSIC PLAYING]

BOB: Yeah.

(SINGING) Karaoke is fun. Wait now, I'm having fun. New things are so much fun.

Hey, guys, I'm having fun.

[LAUGHS]

MOLLY BLOOM: Bob, you did it.

BOB: Thanks for helping me find fun again.

GUNGADOR: Dance party!

[LAUGHS]

(SINGING) I'm Bob.

[VOCALIZING]

SANDEN All right!

TOTTEN:

(SINGING) I'm Bob.

[VOCALIZING]

Hey, you--

[VOCALIZING]

MOLLY BLOOM: Isa, before we joined in on the fun, let's wrap up the show.

ISA CAMARGO: Oh, yeah. The stuff we find fun is usually something that is new or changing in some way.

MOLLY BLOOM: Allows for social bonding.

ISA CAMARGO: And lets us use our imaginations or creativity.

MOLLY BLOOM: Our brain rewards us for playing, because that play is actually hard work.

ISA CAMARGO: It makes new connections in our brains and helps us learn.

MOLLY BLOOM: That's it for this episode of *Brains On*.

ISA CAMARGO: *Brains On* is produced by Marc Sanchez, Sanden Totten, and Molly Bloom.

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ISA CAMARGO: *Brains On* is a nonprofit public radio production. We rely on listener support to keep making new episodes.

MOLLY BLOOM: Listeners like you. Support *Brains On* today at brainson.org/donate.

ISA CAMARGO: In addition to the warm fuzzies of supporting the show, we also have some cool thank you gifts to choose from.

MOLLY BLOOM: Thanks!

ISA CAMARGO: Now before we go, it's time for the Moment of Um.

AUDIO TRACK: Uh. Um. Um. Uh. Um. Um. Um. Um.

COLBY: Hi, my name is Colby, and I live in Wake Forest, North Carolina. And my question is, how do pirates communicate from different ships?

[MUSIC PLAYING]

MARY K. BERCAW EDWARDS: Pirates talk to one another by using flags. One pirate ship would send up a flag that might say one thing, and then the other pirate ship could respond with another flag. And they could ask each other questions, and they could give warnings. They could do all that type of stuff with flags. My name is Mary K. Bercaw Edwards, and I work at Mystic Seaport Museum.

The flags that they used are signal flags, just like you see on ships nowadays. And each of the flags has a different meaning. They are the letters of the alphabet. And then they combined the different letters of the alphabet to say something. For instance, if they wanted to say, I have sprung a leak, they would put up the letters M-S. And then somebody could ask, Beck, can you stop the leak, by putting up B-K-S.

And then they could say, leak is stopped, by putting up B-R-N. Or they could say, cannot stop the leak, by putting it up B-J-P. It was just an international code that at first was pretty informal. It was decided between ships. And 1855, the British Board of Trade codified it. And from then on, it was definite so that all countries could understand the flags.

And of course what pirates might have done was they might have come up with their own codes. So if other people saw the two pirate ships talking to each other, they wouldn't know what the code was. The Jolly Roger was definitely a flag that pirate ships really used. But they might use different versions of it. We always think of the skull on top of the crossed shin bones. But other ones might just use a skull or they just might use the shin bones. They might have slightly different colors.

But whatever, if you saw one of the Jolly Rogers, that would strike fear into your heart. If you were on a merchant ship and saw a ship coming close with the Jolly Roger on it, that would terrify you.

MOLLY BLOOM: We are raising a flag right now to show our amazing listeners how much we appreciate them. It's time for the Brains Honor Roll. These are the talented brainiacs who share their questions, ideas, mystery sounds, and drawings with us. Here they are.

[MUSIC PLAYING]

[LISTING HONOR ROLL]

AUDIO TRACK: Brains Honor Roll. High fives.

MOLLY BLOOM: And remember, you can send us your ideas, drawings, and high fives anytime at brainson.org/contact.

ISA CAMARGO: Now let's go join the dance party.

MOLLY BLOOM: I'll be there in a second. We'll be back in a few weeks with more answers to your questions. Until then, you can find us talking about what makes jokes funny in the Story Pirates podcast feed. And if you haven't heard our new debate show yet, it's called *Smash Boom Fest*. We think you'll like that a lot, too. OK, have fun, and thanks for listening.

[VOCALIZING]

[HOOTING]

[LAUGHING]

[HOOTING]